

SOME OBSERVATIONS RELATING TO THE PROPHYLAXIS OF ARTHRITIS.*

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If we pause to consider what disease produces the greatest amount of suffering, long-continued disability and ultimate invalidism, doubtless we would agree that arthritis, in some form or other, is preeminently entitled to the place of distinction. Arthritis is such a prevalent malady that rarely do we find a home in which it has not been a most unwelcome visitor. From casual inquiry it is unusual to find an individual who has not, at some time or other, been the victim of such a disease.

A large percentage of the hospitals' clinic is composed of men, women and children who are incapacitated by this same disease. A large number of the indigent of the almshouse are they who have been reduced from lives of useful service to a disagreeable existence by some form of arthritis.

Therefore, it seems pertinent to examine into this widespread condition of suffering and maiming in order to ascertain if anything more rational, or more humane, or, indeed, more economic, may be done than has been done for the relief, or better still, for the prevention, of such affliction.

Perhaps the saddest phase of the whole matter is the attitude, almost akin to apathy, which has pervaded humanity, as a whole, toward these unfortunates. The victims of arthritis, especially those afflicted with that particular type of arthritis which is of gradual onset but persistent activity; such victims have been pitied much and relieved but little; for a very long time they have been regarded as a sort of "necessary evil."

If the recent advances in physiologic and in pathologic chemistry are reliable we may feel sure that most of the cases of arthritis are inexcusable and that the occurrence of them offers a very serious reflection upon that which we take no little pride in denominating "Our Twentieth Century Enlightenment."

Arthritis may be considered, broadly, from two aspects; Relief and Prevention. If a consideration of the former represents a more humane interest it may be safely said that a consideration of the latter represents an interest not the less rational.

With regard to relief, one item may be mentioned which is most salutary; it is the movement which is being urged in many parts of the country for the erection of hospitals for the care of the victims of arthritis. The fact that such an effort is being made might, upon first thought, be interpreted as an acknowledgment of a condition which is recognized as being permanent and unavoidable, but let us not be led, thereby, into a deeper apathy, but rather let us consider that such an effort is primarily intended for the *care*, rather than the *cure*, of that large number of victims of arthritis whose condition of crippling has progressively advanced to such an extent that it is regarded as incurable.

Although much time is being given to the *treatment* of disease, in general, still that boon of mankind, preventive medicine, is gradually disseminating light where before there was darkness, and it is

from the standpoint of prophylaxis that the following observations are offered.

For some time past some of our ablest investigators have concerned themselves in an attempt to discover the relation between disease-foci of the mucous membranes and arthritis. Because their results have been, for the greater part, negative, they do not lessen the value of the work they have done, nor do they prove that such a relation does not exist. In spite of their failure to establish such a relation beyond peradventure there is an abundance of evidence pointing to a very direct relation between diseased mucous membranes and diseased joints. The fact that such evidence is *mainly* clinical and almost *entirely* circumstantial need not minimize the importance of the same in the consideration of the prophylaxis of arthritis.

Perhaps the purpose of this paper may be best served by a consideration of some of the more common diseases of the three main mucous-tracts: the naso-pharyngeal, the gastro-intestinal and the genito-urinary, which may be followed by arthritis.

Among the diseases which may invade the naso-pharyngeal mucosa may be mentioned influenza, tonsillitis, scarlatina and diphtheria.

Among those of the genito-urinary tract may be mentioned syphilis and gonorrhea and among those of the gastro-intestinal mucosa may be mentioned typhoid fever, amebic dysentery and intestinal indigestion. The diseases enumerated by no means includes all that may be followed by joint complications but rather the ones that are most commonly dealt with which are *often* followed by joint involvement.

Some of the observations which are submitted to substantiate the relation which is assumed to exist between diseases of the mucous membranes and arthritis are as follows: (1) At the Orthopedic Clinic of the Massachusetts General Hospital one hundred cases of arthritis, excluding tuberculous arthritis, were investigated by the author and approximately 90% of them gave a history of past or present disease of one of the three main mucous-lined tracts. This is not mentioned with the idea that such a history proves that in all of this 90% a diseased mucous membrane was responsible for the joint-disease; nor is it assumed that because in the remaining 10% no such history could be obtained that, therefore, a diseased mucous membrane was not responsible for the arthritis which existed.

(2) Doctor Long of the U. S. Marine Hospital Service, lately stationed at San Francisco, while making observations upon amebiasis, found that in virtually *all* of the cases of amebic dysentery which he studied there was an accompanying arthritis. He also found that the arthritis cleared up under treatment solely directed toward the pathologic condition existing in the intestines.

(3) Doctor Goldthwait has given the author permission to report a case of his in whom there was an arthritis of the cervical spine which was accompanied by an obstinate psoriasis which latter had persisted in spite of careful treatment. Both conditions, the arthritis and the psoriasis, cleared up after evacuating the antrum of Highmore, which

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was filled with pus, from which was obtained a pure culture of the influenza bacillus.

In this case it is presumed that the original focus of disease occurred in the nasal fossae and that the involvement of the antrum of Highmore was a result of such disease.

(4) Time after time a child or young adolescent has been seen who has had repeated attacks of "rheumatism" and so-called "growing pains."

Upon inquiry it was found that such attacks were, in a large proportion of cases, either accompanied or preceded by sore throats and tonsillitis and that the "rheumatism" and "growing pains" ceased after extirpation of the tonsils.

(5) Closely allied, perhaps, to the relation of diseased tonsils to diseased joints is the condition known as Still's disease in which the polyarthritis seems to be very markedly influenced if not entirely dependent upon the pathologic changes occurring in the tonsils.

(6) The development of an arthritis, the so-called "gonorrheal rheumatism," following an attack of gonorrheal urethritis, which has been lighted up by a subsequent attack of gonorrheal urethritis, has been frequently observed.

(7) Another instance that may be mentioned as being relevant is the development of a Charcot's joint as a late manifestation of a lesion which occurred, in a considerable number of such cases, upon a mucous membrane.

(8) Finally, a case of considerable interest occurred in the author's private practice. The patient was a man of 52 years of age who had been, for many years, a great sufferer from exacerbations of polyarthritis.

From this man no history of past or present disease of any mucous membrane could be obtained. The usual remedies had been tried in his case with no material relief. When seen for the first time the patient was suffering from one of these acute exacerbations. His various remedies were abandoned and his food for the following six weeks consisted of buttermilk, sour milk and sour milk curds, the latter being rendered quite palatable by the application to them of milk sugar. Under this treatment the joint disturbances ceased. The patient was then allowed to go back to his usual diet which contained an abundance of meat and shortly after was seized with another attack of polyarthritis. Again the buttermilk and sour milk diet was enjoined and again the joint disturbances ceased. Such a phenomenon is by no means extraordinary.

What, then, is the practical application of the evidence submitted?

Simply this: to direct your attention to the fact that when you are dealing with diseases of the mucous membranes you are dealing, also, with the possibility of joint diseases, with all the crippling and invalidism which joint diseases may produce.

Treatment: It is not the intention of the author to prescribe any particular form of treatment in the various diseases referred to which attack the mucous membranes, but rather to emphasize the importance of that sort of treatment which will most effectively cleanse the mucous membranes, when so diseased,

by removing the toxic products which are produced by such disease.

The surgeon has found it to be a good rule to remove pus and diseased debris from a wound at frequent intervals and it seems not only rational, but also *imperative*, that the medical man should apply this rule in all diseased conditions of the mucous membranes if the patient is to receive the greatest amount of benefit both from a therapeutic as well as from a prophylactic standpoint.

As there are no means of predicting, with accuracy, in a given case of disease of the mucous membrane as to the development of arthritis, it behooves the attending physician to take great care even in the simplest and most common diseases of the mucous membranes in order that joint-complications may be avoided.

A striking instance which bears upon this phase of the subject occurred, not long ago, in the practice of one of the most distinguished of modern medical men. A patient, with a "cold in the head," consulted this man of medical prominence and asked: "What shall I take for a cold in the head"? The answer was: "Take three days." The patient died from pneumonia within seventy-two hours!

Such a disaster is not unique. Neglected colds are prolific sources of pneumonia, pulmonary tuberculosis and arthritis.

In cases of rhinitis it is hardly sufficient to give the patient a few grains of quinin and a hot drink if the most effective service is to be rendered. Many of these cases of rhinitis are produced by the bacillus of influenza; a bacillus which is notoriously versatile.

The nasal chambers of a person afflicted with such a common malady are teeming with millions of these bacilli whose career might be cut short if they were removed from the nasal mucosa by gentle and frequent irrigations with unirritating saline, or mild alkaline solutions, and such a procedure would obviously be of real prophylactic value not only to the one afflicted but also to those with whom such a patient may come in contact. Such a remedy is usually quite comforting to the patient.

Although scarlet fever is a self-limited disease, and even though diphtheria has been shorn of its horror by the use of antitoxin, still the throats of the victims of these diseases harbor various organisms which the patient could do better without and the use of boracic acid solutions, either as a gargle or for irrigating the inflamed mucous membranes, while productive of no harm, might be of much benefit, as in so doing the patient is rendered more comfortable, less menacing to his attendants and at the same time his joints are being safeguarded to a greater or less extent.

Tonsillitis needs especial attention because in children it is so frequently accompanied or followed by joint complications, a fact that must have been frequently observed by all of you.

Whether or not the time will come when healthy tonsils will be removed, as a routine practice, as has been seriously contemplated in regard to the vermiform appendix, because of what may happen when these organs, which are so apt to become, do become, diseased, is a mooted question; but what-

ever may be offered in defense of retaining healthy tonsils does not apply to them, if, during childhood and early adolescence they are involved in repeated attacks of inflammation.

One thing is certain, and that is, that the possession of tonsils which are prone to recurrent inflammatory changes from slight provocation is, by far, attended with much more risk than the non-possession, and, therefore, such tonsils should be removed and a beneficent service rendered to the patient thereby.

With regard to the two common diseases of the genito-urinary tract; gonorrhea and syphilis. Only a word is necessary to emphasize the importance of ridding this tract of the gonococci once they have gained an entrance, as gonorrheal arthritis is too common a sequel of gonorrheal urethritis to admit of any doubt as to the cause-and-effect relation that exists between the disease of the mucous membrane of the urethra and the subsequent arthritis.

As to syphilis it seems to be beyond question that the late manifestations of the disease could be avoided if patients afflicted with this disease could be impressed with the mutilating consequences which are incident to neglected treatment by the ordinarily prescribed and dependable methods. The moral is apparent.

With regard to the treatment of the gastro-intestinal conditions, the proposition presents various difficulties. In the first place there may be no history of pathologic changes taking place in the intestines, and this fact accounts for many cases being overlooked. On the other hand, if there is a history of intestinal indigestion it may require patient investigation for a considerable time to establish the cause.

Then, too, intestinal indigestion is often a very complex process and it is difficult to determine, with precision, in a given case, what product, normally present, is increased or diminished in amount to such an extent as to be considered abnormal.

Presuming that the intestinal indigestion is due to the ameba coli, and such cases are not at all rare in San Francisco, the treatment and the cure of such a case depends, so we are told, upon high enemas of weak solutions of quinin; surely it is not difficult to understand why such a condition is not relieved by the treatment ordinarily prescribed for intestinal indigestion. Again, suppose we are dealing with a case of intestinal indigestion in which the chief difficulty is the inability to digest proteids, and in a large percentage of cases this is the main, if not the only, difficulty; how much permanent relief may be expected in such a case provided that proteids, in general, and meats in particular, are still allowed to constitute a prominent part of the patient's diet?

Other examples might be mentioned which, together with the ones discussed, point unmistakably to one conclusion; the conclusion that the treatment of intestinal indigestion may be most rationally outlined after a chemical and a bacteriological examination of the excreta has been made.

An item of importance in the treatment of such conditions is the withdrawal of the usual diet and the substitution of various milk products which contain large numbers of active lactic acid-producing

organisms. Koumys, kefir and matzoon, each containing approximately 10 per cent. of lactic acid, probably depend upon various strains of lactic acid-producing organisms for the benefit which follows their administration.

More easily prepared, and practically of as much benefit, are the various forms of home-modified milk. Buttermilk is of great service, but it is often difficult or impossible to obtain. Sour milk is, perhaps, of just as much service but not quite so appetizing, and yet it is remarkable how quickly the "taste" for sour milk can be acquired if the more euphonious and less disgusting name of "fermented milk" is used.

Sour milk curds are quite readily taken. They may be covered with milk sugar which renders them more acceptable to some and certainly more efficient to all. There are in the market agents which are supposed to be of great value in producing such fermented milks. As they are modified by age, heat and cold, they are not entirely constant and therefore not entirely reliable. A way out of the difficulty is the method that has been used with success by Dr. Hunkin. A half of a pound of cream cheese (California cream cheese preferably) is cut into small pieces and stirred into a pint of fresh milk. This is kept in a warm temperature for three hours and then placed in a cold place for the remainder of twenty-four hours. A cupful of this mixture is then added to a quart of fresh milk and the same performance as on the previous day is gone through. This is repeated for three days and on the fourth day the "strain" of lactic acid-producing organisms is a very active and a very reliable one. On this fourth day the cupful of the mixture is added to three or four quarts of fresh milk, which, after twenty-four hours, is ready for use. Three pertinent facts may be mentioned in the consideration of the use of these fermented milk products, namely: (1) They are more easily digested than plain milk; (2) no ill effects have been observed following their use, and (3) many obscure cases of arthritis show marked improvement subsequent to the use of such milk products when used as an exclusive diet.

No attempt has been made in this paper to consider all of the diseases of the mucous membranes which may be followed by arthritis.

No attempt has been made in this paper to consider, in detail, the treatment of the diseases that have been considered.

It is not the wish of the author to exaggerate the importance of the observations submitted, nor to minimize the value of any remedy that has been of service to any one. The relation assumed to exist between diseases of the mucous membranes and arthritis is not new, but it is of importance because by a more thorough consideration and treatment of the former the latter may be, to a great extent, avoided, and surely we all agree that prophylaxis is preferable to cure.

Therefore, in virtue of the evidence which has been submitted, it is hoped that you will not only find ample reason to warrant you in returning a verdict in favor of the relation alleged to exist between diseased mucous membranes and diseased joints, but also that in all cases of diseased joints

you will consider the mucous membranes guilty of such relation until they have been proved to be innocent.

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REMOVAL OF FOREIGN BODIES FROM THE LUNG.*

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Report of Cases.

The first case I wish to report was a girl, age two, who was brought to the Lane Hospital with the history of having aspirated a bean the afternoon previous, which in a fit of coughing the mother thought was partly or completely expelled. Following the accident there were a few attacks of dyspnea and cyanosis, but the child otherwise was apparently well until 2 a. m. of the day of entering the hospital. She then began to have severe dyspnea and cyanosis which continued up to the time seen by me. Prior to this trouble the child was in good health excepting a slight cold.

Examination of the patient made by Dr. T. M. McNamara, house surgeon, showed the child in a semi-comatose condition. Intense cyanosis; dyspnea; rapid and feeble pulse and occasional cough. Temperature, 103°. Pulse, 150. Respiration, 60-70. Inspection showed the right side of the chest to move less than the left and it presented a sunken-in appearance anteriorly. The movement of the left side



Five-cent piece, half bean, and clock-leg mentioned in text.

was labored. Percussion, dullness over practically whole of right lung. Auscultation: Right, respiration murmur feeble except over upper part of lung; left, lung negative except for presence of large mucous rales.

The general condition of the child was bad. She was taken to the operating-room, where ether in small quantity was administered and one of the small-sized Killian tubes introduced through the cords and down to the beginning of the right bronchus where a large brown bean was plainly distinguished. It was entirely obturating the bronchus and had so swollen that it was impossible to pass any instrument between it and the inflamed wall of the bronchus. After working for some minutes the difficulties were so great that a tracheotomy was done in order to use as short a tube as possible. The work was now much easier, that is, the field of endeavor was much nearer, though great difficulty was had in making any impression upon the tightly

held bean. Finally the black shell of the bean was detached by small forceps and drawn out. I could now see the division between the cotyledons and managed to push one of them downward past its fellow. It was now the work of a moment to withdraw the loosened half bean. At this point the baby began to show signs of collapse, and though to complete the removal would have been but the matter of a moment, the child did not rally but died on the table.

The criticism I would offer in this case is that when once the bean had been seen and the difficulties of its removal recognized, a tracheotomy should have been done at once. The fifteen minutes' time thus gained might have saved the child's life. Under ordinary circumstances a tracheotomy may not be necessary, but where the life of the child hangs on the time consumed in the operation it should be done unhesitatingly. It would also have been better in such a case to have operated without an anesthetic, but this occurred some years ago when such work was commonly done under anesthesia.

The second case was one of longer-standing trouble, but more felicitous ending. Girl child, 6 years old. Previous to illness very strong and always well. On September 12, 1910, during play the child aspirated the brass leg of an alarm clock. She choked severely and ran to her mother, who said there was a little bleeding from the throat. There was, however, no pain of any moment nor has there been any local pain since. Up to four weeks ago the child appeared to be well and the incident, though not forgotten, was thought to have passed without consequences. Four weeks ago, prior to the time she entered the Lane Hospital, she became sick at the stomach. "Threw up" for several days and began at the same time to cough—there had been no particular cough up to this time. This cough persisted up to her entrance to the hospital and was at times very severe. Once she coughed almost steadily for four hours—till she was exhausted. After a few days she would appear better for a short time, then the coughing and prostration would come on again. There was a daily temperature and the formerly active child became dull and listless and content to lie quiet. She complained almost constantly of headache and earache. Never expectorated much till about one week before coming to the hospital, then there was some blood stain to the expectoration.

The child was taken to the local physician, Dr. C. H. Congden of Jamestown, California, who had an X-Ray picture made at once. This showed a foreign body in the left lung. When first seen by Dr. Congden the child was emaciated, coughed exhaustingly. Temperature, 103°; pulse, 140. No respiratory sounds could be made out on the left side. After attempts to remove the foreign body by manipulation of the child proved futile, a tracheotomy was done and a sound was passed as shown in the X-Ray plate and the foreign body could be felt plainly and its position was undoubtedly changed, for afterward the breath sounds in the left upper lobe of the lung were fairly normal.

The foreign body had first obturated the entire left bronchus and then through the probing was pushed on till it occupied the position in which I found it, that is, blocking the bronchus to the lower lobe of the left lung.

When first seen by me through the courtesy of Dr. Wallace I. Terry, about 6 months after the aspiration of the foreign body, the child showed extreme emaciation, had no appetite, and had constant coughing paroxysms. She was taken to the operating-room. Ether was administered, the tracheotomy wound opened and a small-sized Killian tube as modified by Brunnings introduced through it. The foreign body was quickly found, entirely blocking the left lower bronchus. The shining, smooth metal end

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